Setting up

```
PS C:\Users\Woysh\Documents\AY 2020-2021\EEE 197\Week 10\ME8_Containerization_and_Docker\3-building_images> docker pull ubuntu:16.04
16.04: Pulling from library/ubuntu
Digest: sha256:6aab78d1825b4c15c159fecc62b8eef4fdf0c693a15aace3a605ad44e5e2df0c
Status: Image is up to date for ubuntu:16.04
docker.io/library/ubuntu:16.04
PS C:\Users\Woysh\Documents\AY 2020-2021\EEE 197\Week 10\ME8_Containerization_and_Docker\3-building_images>
```

Docker rmi to the previous exercise

```
ubuntu          16.04       065cf14a189c    3 days ago     135MB
PS C:\Users\Woysh\Documents\AY 2020-2021\EEE 197\Week 10\ME8_Containerization_and_Docker\3-building_images> docker rmi c11
Untagged: delner/ping:latest
Deleted: sha256:c11725ad5b011056f54bae034363f21e33daafd7ebfc2a0f4a208e747a97eae9
PS C:\Users\Woysh\Documents\AY 2020-2021\EEE 197\Week 10\ME8_Containerization_and_Docker\3-building_images> docker rmi ffe
Deleted: sha256:ffe66eac9de5703529cab87bf3db3f4f37991effebe302332085d1ab40af1b51
PS C:\Users\Woysh\Documents\AY 2020-2021\EEE 197\Week 10\ME8_Containerization_and_Docker\3-building_images>
```

1) Building current dockerfile

```
PS C:\Users\Woysh\Documents\AY 2020-2021\EEE 197\Week 10\ME8_Containerization_and_Docker\3-building_images> docker build -t 'ryan/ping' .
[+] Building 0.1s (7/7) FINISHED
 => [internal] load build definition from Dockerfile
 => => transferring dockerfile: 143B
 => [internal] load .dockerignore
 => => transferring context: 2B
 => [internal] load metadata for docker.io/library/ubuntu:16.04
 => [1/3] FROM docker.io/library/ubuntu:16.04
 => CACHED [2/3] RUN apt-get update
 => CACHED [3/3] RUN apt-get install -y iputils-ping
 => exporting to image
 => => exporting layers
 => => writing image sha256:ffe66eac9de5703529cab87bf3db3f4f37991effebe302332085d1ab40af1b51
 => => naming to docker.io/ryan/ping

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
PS C:\Users\Woysh\Documents\AY 2020-2021\EEE 197\Week 10\ME8_Containerization_and_Docker\3-building_images>
```

Docker images

```
PS C:\Users\Woysh\Documents\AY 2020-2021\EEE 197\Week 10\ME8_Containerization_and_Docker\3-building_images> docker images
REPOSITORY      TAG         IMAGE ID        CREATED         SIZE
ryan/ping       latest      ffe66eac9de5    5 hours ago     170MB
ubuntu          16.04       065cf14a189c    3 days ago      135MB
PS C:\Users\Woysh\Documents\AY 2020-2021\EEE 197\Week 10\ME8_Containerization_and_Docker\3-building_images>
```

2) Optimized Docker file

```
PS C:\Users\Woysh\Documents\AY 2020-2021\EEE 197\Week 10\ME8_Containerization_and_Docker\3-building_images> docker build -t 'ryan/ping' .
[+] Building 0.1s (6/6) FINISHED
 => [internal] load build definition from Dockerfile
 => => transferring dockerfile: 210B
 => [internal] load .dockerignore
 => => transferring context: 2B
 => [internal] load metadata for docker.io/library/ubuntu:16.04
 => [1/2] FROM docker.io/library/ubuntu:16.04
 => CACHED [2/2] RUN apt-get clean    && cd /var/lib/apt/lists && rm -fr "Release" "Sources" "Packages"    && truncate -s 0 /var/log/*log
 => exporting to image
 => => exporting layers
 => => writing image sha256:c11725ad5b011056f54bae034363f21e33daafd7ebfc2a0f4a208e747a97eae9
 => => naming to docker.io/ryan/ping

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
PS C:\Users\Woysh\Documents\AY 2020-2021\EEE 197\Week 10\ME8_Containerization_and_Docker\3-building_images>
```

Docker images of optimized Dockerfile

```
PS C:\Users\Woysh\Documents\AY 2020-2021\EEE 197\Week 10\ME8_Containerization_and_Docker\3-building_images> docker images
REPOSITORY      TAG         IMAGE ID        CREATED         SIZE
ryan/ping       latest      c11725ad5b01    5 hours ago     135MB
<none>          <none>      ffe66eac9de5    5 hours ago     170MB
ubuntu          16.04       065cf14a189c    3 days ago      135MB
```

Dockerfile rewritten

```
[+] Building 92.3s (6/6) FINISHED
```

Docker images of Docker rewritten

```
PS C:\Users\Woysh\Documents\AY 2020-2021\EEE 197\Week 10\ME8_Containerization_and_Docker\3-building_images> docker images
REPOSITORY      TAG        IMAGE ID        CREATED            SIZE
ryan/ping       latest     87b7d98fae75    About a minute ago 139MB
<none>          <none>     c11725ad5b01    5 hours ago        135MB
<none>          <none>     ffe66eac9de5    6 hours ago        170MB
ubuntu          16.04      065cf14a189c    3 days ago         135MB
```

Final Dockerfile build

```
[+] Building 0.1s (6/6) FINISHED
```

docker run -it ryan/ping

```
PS C:\Users\Woysh\Documents\AY 2020-2021\EEE 197\Week 10\ME8_Containerization_and_Docker\3-building_images> docker run -it ryan/ping
PING google.com (172.217.31.238) 56(84) bytes of data.
64 bytes from 172.217.31.238: icmp_seq=1 ttl=37 time=57.5 ms
64 bytes from 172.217.31.238: icmp_seq=2 ttl=37 time=60.8 ms
64 bytes from 172.217.31.238: icmp_seq=3 ttl=37 time=58.3 ms
64 bytes from 172.217.31.238: icmp_seq=4 ttl=37 time=56.3 ms
64 bytes from 172.217.31.238: icmp_seq=5 ttl=37 time=56.3 ms
^C
--- google.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4006ms
rtt min/avg/max/mdev = 56.304/57.882/60.852/1.690 ms
PS C:\Users\Woysh\Documents\AY 2020-2021\EEE 197\Week 10\ME8_Containerization_and_Docker\3-building_images>
```